

**RESULT LIST**

14 results found in the Worldwide database for:  
**time series** in the title AND **stock** in the title or abstract  
 (Results are sorted by date of upload in database)

- 1 Computerized process for tracking tight-flow supply between supplier (s) and client comprises setting up table for each product over series of time periods starting at set time**  
 Inventor: CHEMINAIS DANIEL; HORNET DIDIER; (+1) Applicant: VALLOUREC MANNESMANN OIL & GAS (FR)  
 EC: G06Q10/00E IPC: **G06Q10/00; G06Q10/00**; (IPC1-7): G06F17/60  
 Publication info: **FR2829850** - 2003-03-21
- 2 AN ARTIFICIAL NEURAL NETWORK BASED UNIVERSAL TIME SERIES**  
 Inventor: LI BIN (US); LI LIANG (US); (+2) Applicant: WESTPORT FINANCIAL LLC (US); LI BIN (US); (+3)  
 EC: G06N3/04T IPC: **G06N3/04; G06N3/00**; (IPC1-7): G06N3/02  
 Publication info: **WO0115079** - 2001-03-01
- 3 Artificial neural network based universal time series**  
 Inventor: LI LIANG (US); TANG YI (US); (+2) Applicant: WESTPORT FINANCIAL LLC (US)  
 EC: G06N3/04T IPC: **G06N3/04; G06N3/00**; (IPC1-7): G06F15/18  
 Publication info: **US6735580** - 2004-05-11
- 4 METHOD FOR PROCESSING STOCK PRICE DATA IN TIME SERIES, SECURITIES DEALING SUPPORT METHOD, AND DEVICE FOR SAME**  
 Inventor: IIDA TATSUhide; IIDA KAYOKO Applicant: KENTEX KK  
 EC: IPC: (IPC1-7): G06F17/60  
 Publication info: **JP2001167148** - 2001-06-22
- 5 Statistical sample sequence classification method for time series data e.g. stock market**  
 Inventor: DECO GUSTAVO DR (DE); SCHITTENKOPF CHRISTIAN (DE) Applicant: SIEMENS AG (DE)  
 EC: G06F17/18 IPC: **G06F17/18; G06F17/18**; (IPC1-7): G01D1/16 (+2)  
 Publication info: **DE19643918** - 1998-02-05
- 6 PREDICTION AND TRANSACTION AID DEVICE FOR TIME SERIES DATA RELATING TO MARKET TRANSACTION**  
 Inventor: YAMADA MASUHIRO Applicant: YAMADA MASUHIRO  
 EC: IPC: **G06F17/00; G06F17/00**; (IPC1-7): G06F17/00 (+1)  
 Publication info: **JP7044529** - 1995-02-14
- 7 TIME SERIES PREDICTION METHOD BY NEURAL NETWORK**  
 Inventor: MASUI HIRONARI; KAMINARI HIROYUKI Applicant: HITACHI LTD  
 EC: IPC: **G06F15/18; G06F15/18**; (IPC1-7): G06F15/18 (+1)  
 Publication info: **JP6337852** - 1994-12-06
- 8 TIME SERIES INVENTORY ASSIGNING SYSTEM**  
 Inventor: YOSHIDA FUMIHIKO Applicant: NEC SOFTWARE KANSAI  
 EC: IPC: (IPC1-7): G06F15/24  
 Publication info: **JP4289967** - 1992-10-14
- 9 COLLATING METHOD FOR TIME SERIES PATTERN**  
 Inventor: MIZUNO HIROTAKA; KOSAKA MITSUTAKA; (+1) Applicant: HITACHI LTD  
 EC: IPC: **G06F7/02; G06F7/02**; (IPC1-7): G06F7/02  
 Publication info: **JP3105522** - 1991-05-02
- 10 AUTOMATIC DISTRIBUTING SYSTEM FOR TIME SERIES RESULTS**

**DATA**

**Inventor:** MIZUNO YASUHIKO; MIMORI SADAMICHI; **Applicant:** HITACHI LTD  
(+2)

**EC:**

**IPC:** G06F7/22; G06F12/00; G06F13/00 (+9)

**Publication info:** JP1237743 - 1989-09-22

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Data supplied from the **esp@cenet** database - Worldwide

**RESULT LIST**

5 results found in the Worldwide database for:  
**time series** in the title AND **market** in the title or abstract  
(Results are sorted by date of upload in database)

**1 TIME SERIES DATA FORECAST METHOD AND DEVICE**

Inventor: OHIRA TORU; TAKAYASU HIDEKI; (+1)

Applicant: SONY CORP

EC:

IPC: **G06F17/18; G06F19/00; G06F17/18** (+4)

Publication info: **JP2002298064** - 2002-10-11

**2 Statistical sample sequence classification method for time series data  
e.g. stock market**

Inventor: DECO GUSTAVO DR (DE); SCHITTENKOPF  
CHRISTIAN (DE)

Applicant: SIEMENS AG (DE)

EC: G06F17/18

IPC: **G06F17/18; G06F17/18**; (IPC1-7): G01D1/16  
(+2)

Publication info: **DE19643918** - 1998-02-05

**3 PREDICTION AND TRANSACTION ASSISTANCE DEVICE FOR TIME-  
SERIES DATA REGARDING MARKET TRANSACTION**

Inventor: YAMADA MASUHIRO

Applicant: YAMADA MASUHIRO

EC:

IPC: **G06F17/00; G06F17/00**; (IPC1-7): G06F17/00  
(+1)

Publication info: **JP7168806** - 1995-07-04

**4 PREDICTION AND TRANSACTION AID DEVICE FOR TIME SERIES  
DATA RELATING TO MARKET TRANSACTION**

Inventor: YAMADA MASUHIRO

Applicant: YAMADA MASUHIRO

EC:

IPC: **G06F17/00; G06F17/00**; (IPC1-7): G06F17/00  
(+1)

Publication info: **JP7044529** - 1995-02-14

**5 TIME SERIES PREDICTING DEVICE**

Inventor: OBARA KAZUHIRO

Applicant: NIPPON TELEGRAPH & TELEPHONE

EC:

IPC: **G06F15/18; G06F15/18**; (IPC1-7): G06F15/20  
(+1)

Publication info: **JP6139227** - 1994-05-20

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Data supplied from the **esp@cenet** database - Worldwide

**RESULT LIST**

4 results found in the Worldwide database for:  
**time series** in the title AND **securities** in the title or abstract  
(Results are sorted by date of upload in database)

**1 AN ARTIFICIAL NEURAL NETWORK BASED UNIVERSAL TIME SERIES****Inventor:** LI BIN (US); LI LIANG (US); (+2)**Applicant:** WESTPORT FINANCIAL LLC (US); LI BIN (US); (+3)**EC:** G06N3/04T**IPC:** **G06N3/04; G06N3/00;** (IPC1-7): G06N3/02**Publication info:** **WO0115079** - 2001-03-01**2 Artificial neural network based universal time series****Inventor:** LI LIANG (US); TANG YI (US); (+2)**Applicant:** WESTPORT FINANCIAL LLC (US)**EC:** G06N3/04T**IPC:** **G06N3/04; G06N3/00;** (IPC1-7): G06F15/18**Publication info:** **US6735580** - 2004-05-11**3 METHOD FOR PROCESSING STOCK PRICE DATA IN TIME SERIES, SECURITIES DEALING SUPPORT METHOD, AND DEVICE FOR SAME****Inventor:** IIDA TATSUhide; IIDA KAYOKO**Applicant:** KENTEX KK**EC:****IPC:** (IPC1-7): G06F17/60**Publication info:** **JP2001167148** - 2001-06-22**4 Evaluating and representing securities data time series on computer monitor, printer etc. by allocating colors to values of percentage change values of data time series****Inventor:** EICHNER MAX (DE)**Applicant:** EICHNER MAX (DE)**EC:** G06Q40/00B**IPC:** (IPC1-7): G06F17/60**Publication info:** **DE19851750** - 2000-05-11

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Data supplied from the **esp@cenet** database - Worldwide

**RESULT LIST**

1 result found in the Worldwide database for:  
**time series** in the title AND **trading** in the title or abstract  
(Results are sorted by date of upload in database)

**1 SELLING DEVICE, TRADING SYSTEM, SELLING METHOD, TRADING METHOD FOR TIME SERIES INFORMATION, AND MEDIUM OFFERING PROCESS PROGRAM**

**Inventor:** SUGITANI KAZUNOBU

**Applicant:** CANON KK

**EC:**

**IPC:** (IPC1-7): G06F17/60

**Publication info:** JP2002183556 - 2002-06-28

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Data supplied from the *esp@cenet* database - Worldwide

**RESULT LIST**

Approximately **242** results found in the Worldwide database for:  
**database** in the title AND **structures** in the title or abstract  
 (Results are sorted by date of upload in database)

**1 Methods, apparatus, and data structures for annotating a database design schema and/or indexing annotations**

Inventor: MCCONNELL CHRISTOPHER CLAYTON (US) Applicant: MICROSOFT CORP (US)

EC:

IPC: G06F17/30; G06F17/30

Publication info: US6999963 - 2006-02-14

**2 Database generation systems and methods**

Inventor: NETZ AMIR (US); SANDERS PAUL J (US); (+3) Applicant: MICROSOFT CORP (US)

EC:

IPC: G06F17/00; G06F17/00

Publication info: US2006020619 - 2006-01-26

**3 Method and apparatus for synchronizing dataset object properties with underlying database structures**

Inventor: CHRISTENSEN BARBARA A (US); HILL MICHAEL J (US); (+3) Applicant:

EC:

IPC: (IPC1-7): G06F17/00

Publication info: US2005262169 - 2005-11-24

**4 Methods, apparatus, and data structures for annotating a database design schema and/or indexing annotations**

Inventor: MCCONNELL CHRISTOPHER C (US) Applicant: MICROSOFT CORP (US)

EC:

IPC: (IPC1-7): G06F7/00

Publication info: US2005256889 - 2005-11-17

**5 EFFICIENT INDEXING OF HIERARCHICAL RELATIONAL DATABASE RECORDS**

Inventor: GAPONOFF MARK A (US) Applicant: IDX SYSTEMS CORP (US); GAPONOFF MARK A (US)

EC:

IPC: G06F7/00; G06F7/00

Publication info: WO2005077123 - 2005-08-25

**6 Data referencing within a database graph**

Inventor: LORD ROBERT W (US); SUVER CHRISTOPHER A (US) Applicant: MICROSOFT CORP (US)

EC: G06F17/30G3; G06F17/30T

IPC: G06F17/30; G06F17/30; (IPC1-7): G06T11/20 (+1)

Publication info: US2005151738 - 2005-07-14

**7 System and method for updating, enhancing, or refining a geographic database using feedback**

Inventor: CHERVENY KEVIN (US); CRANE AARON (US); (+3) Applicant:

EC: G01C21/26; G08G1/0969

IPC: G01C21/26; G08G1/0969; G01C21/26 (+2)

Publication info: US2005149259 - 2005-07-07

**8 INTEGRATED DATABASE MANAGEMENT OF PROTEIN AND LIGAND STRUCTURES**

Inventor: POTTS STEVEN J (US); SZALMA SANDOR (US); (+3) Applicant: ACCELRY'S SOFTWARE INC (US); POTTS STEVEN J (US); (+4)

EC:

IPC: G06F17/30; G06F19/00; G06F17/30 (+2)

Publication info: WO2005055114 - 2005-06-16

**9 Integrated database management of protein and ligand structures**

Inventor: POTTS STEVEN J (US); SZALMA SANDOR (US); (+3) Applicant:

EC:

IPC: G06F7/00; G06F7/00; (IPC1-7): G06F7/00

Publication info: **US2005182746** - 2005-08-18

**10 Techniques for partial rewrite of XPath queries in a relational database**

Inventor: WARNER JAMES W (US); LIU ZHEN HUA

Applicant:

(US); (+5)

EC:

IPC: **G06F7/00; G06F7/00**; (IPC1-7): G06F7/00

Publication info: **US2005065949** - 2005-03-24

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Data supplied from the **esp@cenet** database - Worldwide

**RESULT LIST**

3 results found in the Worldwide database for:  
**time series** in the title AND **databases** in the title or abstract  
(Results are sorted by date of upload in database)

**1 Modeling sequence and time series data in predictive analytics**

Inventor: KIM PYUNGCHUL (US); MACLENNAN C J (US); Applicant: MICROSOFT CORP (US)  
(+1)

EC:

IPC: G06F7/00; G06F7/00

Publication info: US2006010142 - 2006-01-12

**2 Method and system for computing categories and prediction of categories utilizing time-series classification data**

Inventor: RIETMAN EDWARD A (US)

Applicant:

EC:

IPC: G06F15/18; G06F15/18; (IPC1-7): G06F15/18

Publication info: US2005010541 - 2005-01-13

**3 A SUBSEQUENCE MATCHING METHOD USING DUALITY IN CONSTRUCTING WINDOWS IN TIME-SERIES DATABASES**

Inventor: WHANG KYU-YOUNG; MOON YANG-SAE

Applicant: KOREA INST SCIENCE TECHNOLOGY (KR)

EC:

IPC: G06F1/00; G06F17/30; G06F (+3)

Publication info: WO0146771 - 2001-06-28

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Data supplied from the esp@cenet database - Worldwide



**RESULT LIST**

6 results found in the Worldwide database for:  
**time series** in the title AND **financial** in the title or abstract  
(Results are sorted by date of upload in database)

- 1 Method and system for computing categories and prediction of categories utilizing time-series classification data**  
Inventor: RIETMAN EDWARD A (US)      Applicant:  
EC:      IPC: **G06F15/18; G06F15/18; (IPC1-7): G06F15/18**  
Publication info: **US2005010541** - 2005-01-13
- 2 SELLING DEVICE, TRADING SYSTEM, SELLING METHOD, TRADING METHOD FOR TIME SERIES INFORMATION, AND MEDIUM OFFERING PROCESS PROGRAM**  
Inventor: SUGITANI KAZUNOBU      Applicant: CANON KK  
EC:      IPC: (IPC1-7): G06F17/60  
Publication info: **JP2002183556** - 2002-06-28
- 3 AN ARTIFICIAL NEURAL NETWORK BASED UNIVERSAL TIME SERIES**  
Inventor: LI BIN (US); LI LIANG (US); (+2)      Applicant: WESTPORT FINANCIAL LLC (US); LI BIN (US); (+3)  
EC: G06N3/04T      IPC: **G06N3/04; G06N3/00; (IPC1-7): G06N3/02**  
Publication info: **WO0115079** - 2001-03-01
- 4 Artificial neural network based universal time series**  
Inventor: LI LIANG (US); TANG YI (US); (+2)      Applicant: WESTPORT FINANCIAL LLC (US)  
EC: G06N3/04T      IPC: **G06N3/04; G06N3/00; (IPC1-7): G06F15/18**  
Publication info: **US6735580** - 2004-05-11
- 5 Automatic monitoring and analysis of financial index time series for generation of none gain limited transaction order signals by comparison of existing values with previous values according to two different criteria**  
Inventor: SCHAEFERMEIER BIRGER (DE)      Applicant: SCHAEFERMEIER BIRGER (DE)  
EC: G06Q40/00A      IPC: **G06Q40/00; G06Q40/00; (IPC1-7): G06F17/60**  
Publication info: **DE19956626** - 2000-10-05
- 6 TIME SERIES RECORDING SYSTEM FOR TERMINAL OF FINANCIAL INSTITUTION**  
Inventor: HINO HARUHIKO      Applicant: NIPPON ELECTRIC CO  
EC:      IPC: **G06F11/34; G07D9/00; G06F11/34 (+4)**  
Publication info: **JP4310141** - 1992-11-02

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Data supplied from the **esp@cenet** database - Worldwide

**RESULT LIST**

4 results found in the Worldwide database for:

**time series** in the title AND **trends** in the title or abstract

(Results are sorted by date of upload in database)

**1 Method and apparatus for time series graph display**

Inventor: GOGGIN DAVID E (US)

Applicant:

EC:

IPC: **G06T11/20; G06T11/20**; (IPC1-7): G06T11/20Publication info: **US2005162423** - 2005-07-28**2 System and methods for display of time-series data distribution**

Inventor: MCGEE JOHN J (US); COURTEMACHE

Applicant: ALTAWORKS CORP (US)

MICHAEL B (US); (+1)

EC: G06F11/32P; G06F17/18

IPC: **G06F11/32; G06F17/18**; G06F11/34 (+4)Publication info: **US2003088542** - 2003-05-08**3 Method and system to identify discrete trends in time series**

Inventor: BOERNER SEAN T (US)

Applicant:

EC: G06F17/18

IPC: **G06F17/18; G06F17/18**; (IPC1-7): G06F17/60Publication info: **US2003009399** - 2003-01-09**4 INTEGRATED METHOD FOR CHAOTIC TIME SERIES ANALYSIS**

Inventor: HIVELEY LEE M; NG ESMOND G

Applicant: LOCKHEED MARTIN ENERGY RES COR (US)

EC:

IPC: **A61B5/00; A61B5/04; G06F17/00** (+4)Publication info: **WO9849935** - 1998-11-12

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 Terms used **time series databases structure mapping**

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### 1 [Locally adaptive dimensionality reduction for indexing large time series databases](#)



Kaushik Chakrabarti, Eamonn Keogh, Sharad Mehrotra, Michael Pazzani

 June 2002 **ACM Transactions on Database Systems (TODS)**, Volume 27 Issue 2

Publisher: ACM Press

 Full text available: [pdf\(1.48 MB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Similarity search in large time series databases has attracted much research interest recently. It is a difficult problem because of the typically high dimensionality of the data. The most promising solutions involve performing dimensionality reduction on the data, then indexing the reduced data with a multidimensional index structure. Many dimensionality reduction techniques have been proposed, including Singular Value Decomposition (SVD), the Discrete Fourier transform (DFT), and the Discrete ...

**Keywords:** Dimensionality reduction, indexing, time-series similarity retrieval

### 2 [Locally adaptive dimensionality reduction for indexing large time series databases](#)



Eamonn Keogh, Kaushik Chakrabarti, Michael Pazzani, Sharad Mehrotra

 May 2001 **ACM SIGMOD Record, Proceedings of the 2001 ACM SIGMOD international conference on Management of data SIGMOD '01**, Volume 30 Issue 2

Publisher: ACM Press

 Full text available: [pdf\(300.08 KB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Similarity search in large time series databases has attracted much research interest recently. It is a difficult problem because of the typically high dimensionality of the data.. The most promising solutions involve performing dimensionality reduction on the data, then indexing the reduced data with a multidimensional index structure. Many dimensionality reduction techniques have been proposed, including Singular Value Decomposition (SVD), the Discrete Fourier transform (DFT), and the Discr ...

**Keywords:** content-based retrieval, dimensionality reduction, indexing

### 3 [Sequence Mining: Efficient and robust feature extraction and pattern matching of time series by a lattice structure](#)



Polly Wan Po Man, Man Hon Wong

October 2001 **Proceedings of the tenth international conference on Information and knowledge management**

Publisher: ACM Press

Full text available:  pdf(1.48 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The efficiency of searching scaling-invariant and shifting-invariant shapes in a set of massive time series data can be improved if searching is performed on an approximated sequence which involves less data but contains all the significant features. However, commonly used smoothing techniques, such as moving averages and best-fitting polylines, usually miss important peaks and troughs and deform the time series. In addition, these techniques are not robust, as they often requires users to suppl ...

4 Fast subsequence matching in time-series databases



Christos Faloutsos, M. Ranganathan, Yannis Manolopoulos

May 1994 **ACM SIGMOD Record , Proceedings of the 1994 ACM SIGMOD international conference on Management of data SIGMOD '94**, Volume 23 Issue 2

Publisher: ACM Press

Full text available:  pdf(1.01 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We present an efficient indexing method to locate 1-dimensional subsequences within a collection of sequences, such that the subsequences match a given (query) pattern within a specified tolerance. The idea is to map each data sequences into a small set of multidimensional rectangles in feature space. Then, these rectangles can be readily indexed using traditional spatial access methods, like the R\*-tree [9]. In more detail, we use a sliding window over the data sequence and extract its fea ...

5 Modeling the storage architectures of commercial database systems



D. S. Batory

December 1985 **ACM Transactions on Database Systems (TODS)**, Volume 10 Issue 4

Publisher: ACM Press

Full text available:  pdf(4.46 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Modeling the storage structures of a DBMS is a prerequisite to understanding and optimizing database performance. Previously, such modeling was very difficult because the fundamental role of conceptual-to-internal mappings in DBMS implementations went unrecognized. In this paper we present a model of physical databases, called the transformation model, that makes conceptual-to-internal mappings explicit. By exposing such mappings, we show that it is possible to model the storage ...


6 Searching in high-dimensional spaces: Index structures for improving the performance of multimedia databases



Christian Böhm, Stefan Berchtold, Daniel A. Keim

September 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 3

Publisher: ACM Press

Full text available:  pdf(1.39 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

During the last decade, multimedia databases have become increasingly important in many application areas such as medicine, CAD, geography, and molecular biology. An important research issue in the field of multimedia databases is the content-based retrieval of similar multimedia objects such as images, text, and videos. However, in contrast to searching data in a relational database, a content-based retrieval requires the search of similar objects as a basic functionality of the database system ...

**Keywords:** Index structures, indexing high-dimensional data, multimedia databases,

similarity search

7 A new approach to protein structure and function analysis using semi-structured databases

William M. Shui, Raymond K. Wong, Stephen C. Graham, Lawrence K. Lee, W. Bret Church  
January 2003 **Proceedings of the First Asia-Pacific bioinformatics conference on**

**Bioinformatics 2003 - Volume 19 CRPITS '03**

**Publisher:** Australian Computer Society, Inc.

Full text available:  pdf(144.54 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The development of high-throughput genome sequencing and protein structure determination techniques have provided researchers with a wealth of biological data. Integrated analysis of such data is difficult due to the disparate nature of the repositories used to store this biological data and of the software used for its analysis. This paper presents a framework based upon the use of semi-structured database management systems that would provide an integrated interface for the collection, storage ...

8 Industry/government track papers: Visually mining and monitoring massive time series

Jessica Lin, Eamonn Keogh, Stefano Lonardi, Jeffrey P. Lankford, Donna M. Nystrom  
August 2004 **Proceedings of the tenth ACM SIGKDD international conference on**

**Knowledge discovery and data mining KDD '04**

**Publisher:** ACM Press

Full text available:  pdf(923.29 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Moments before the launch of every space vehicle, engineering discipline specialists must make a critical *go/no-go* decision. The cost of a false positive, allowing a launch in spite of a fault, or a false negative, stopping a potentially successful launch, can be measured in the tens of millions of dollars, not including the cost in morale and other more intangible detriments. The Aerospace Corporation is responsible for providing engineering assessments critical to the *go/no-go* de ...

**Keywords:** anomaly detection, motif discovery, pattern discovery, time series, visualization

9 The time index+: an incremental access structure for temporal databases

Vram Kouramajian, Ibrahim Kamel, Ramez Elmasri, Syed Waheed

November 1994 **Proceedings of the third international conference on Information and knowledge management**

**Publisher:** ACM Press

Full text available:  pdf(872.15 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

10 A subsequence matching algorithm supporting moving average transform of arbitrary order in time-series databases using index interpolation

Woong-Kee Loh, Sang-Wook Kim

January 2001 **Proceedings of the 12th Australasian conference on Database technologies ADC '01**

**Publisher:** IEEE Computer Society

Full text available:  pdf(783.60 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)  
 [Publisher Site](#)

In this paper, we propose a subsequence matching algorithm that supports moving average transform of arbitrary order in time-series databases. The existing subsequence matching algorithm by Faloutsos et al. would require an index for each moving average order, which causes serious storage and CPU time overhead. In this paper, we solve the problem using index interpolation. The proposed algorithm can use only a few indexes for pre-selected moving average orders  $k$  and performs subsequence matching ...

**Keywords:** index interpolation, moving average transform, subsequence matching, time-series databases

#### 11 A comparison of DFT and DWT based similarity search in time-series databases



Yi-Leh Wu, Divyakant Agrawal, Amr El Abbadi

November 2000 **Proceedings of the ninth international conference on Information and knowledge management**

**Publisher:** ACM Press

Full text available: [pdf\(268.08 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** fourier transform, smoothing, time-series analysis, time-series database, time-series matching, wavelet transform

#### 12 Time series similarity measures (tutorial PM-2)



Dimitrios Gunopulos, Gautam Das

August 2000 **Tutorial notes of the sixth ACM SIGKDD international conference on Knowledge discovery and data mining**

**Publisher:** ACM Press

Full text available: [pdf\(1.42 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

#### 13 A data model and data structures for moving objects databases



Luca Forlizzi, Ralf Hartmut Güting, Enrico Nardelli, Markus Schneider

May 2000 **ACM SIGMOD Record , Proceedings of the 2000 ACM SIGMOD international conference on Management of data SIGMOD '00**, Volume 29 Issue 2

**Publisher:** ACM Press

Full text available: [pdf\(1.30 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We consider spatio-temporal databases supporting spatial objects with continuously changing position and extent, termed *moving objects databases*. We formally define a data model for such databases that includes complex evolving spatial structures such as line networks or multi-component regions with holes. The data model is given as a collection of data types and operations which can be plugged as attribute types into any DBMS data model (e.g. relational, or object-oriented) to obtain ...

#### 14 Real-time shading



Marc Olano, Kurt Akeley, John C. Hart, Wolfgang Heidrich, Michael McCool, Jason L. Mitchell, Randi Rost

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

**Publisher:** ACM Press

Full text available: [pdf\(7.39 MB\)](#) Additional Information: [full citation](#), [abstract](#)

Real-time procedural shading was once seen as a distant dream. When the first version of

this course was offered four years ago, real-time shading was possible, but only with one-of-a-kind hardware or by combining the effects of tens to hundreds of rendering passes. Today, almost every new computer comes with graphics hardware capable of interactively executing shaders of thousands to tens of thousands of instructions. This course has been redesigned to address today's real-time shading capabilities ...

# 15 Index interpolation: an approach to subsequence matching supporting normalization

## transform in time-series databases

Woong-Kee Loh, Sang-Wook Kim, Kyu-Young Whang

November 2000 **Proceedings of the ninth international conference on Information and knowledge management**

**Publisher:** ACM Press

Full text available:  pdf(245.67 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

# 16 Research sessions: potpourri: Mining database structure; or, how to build a data quality browser



Tamraparni Dasu, Theodore Johnson, S. Muthukrishnan, Vladislav Shkapenyuk

June 2002 **Proceedings of the 2002 ACM SIGMOD international conference on Management of data SIGMOD '02**

**Publisher:** ACM Press

Full text available:  pdf(1.21 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Data mining research typically assumes that the data to be analyzed has been identified, gathered, cleaned, and processed into a convenient form. While data mining tools greatly enhance the ability of the analyst to make data-driven discoveries, most of the time spent in performing an analysis is spent in data identification, gathering, cleaning and processing the data. Similarly, schema mapping tools have been developed to help automate the task of using legacy or federated data sources for a n ...

# 17 GPGPU: general purpose computation on graphics hardware



David Luebke, Mark Harris, Jens Krüger, Tim Purcell, Naga Govindaraju, Ian Buck, Cliff Woolley, Aaron Lefohn

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

**Publisher:** ACM Press

Full text available:  pdf(63.03 MB) Additional Information: [full citation](#), [abstract](#)

The graphics processor (GPU) on today's commodity video cards has evolved into an extremely powerful and flexible processor. The latest graphics architectures provide tremendous memory bandwidth and computational horsepower, with fully programmable vertex and pixel processing units that support vector operations up to full IEEE floating point precision. High level languages have emerged for graphics hardware, making this computational power accessible. Architecturally, GPUs are highly parallel s ...

# 18 Data streams I: A symbolic representation of time series, with implications for streaming algorithms



Jessica Lin, Eamonn Keogh, Stefano Lonardi, Bill Chiu

June 2003 **Proceedings of the 8th ACM SIGMOD workshop on Research issues in data mining and knowledge discovery**

**Publisher:** ACM Press

Full text available:  pdf(455.55 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

The parallel explosions of interest in streaming data, and data mining of time series have had surprisingly little intersection. This is in spite of the fact that time series data are

typically streaming data. The main reason for this apparent paradox is the fact that the vast majority of work on streaming data explicitly assumes that the data is discrete, whereas the vast majority of time series data is real valued. Many researchers have also considered transforming real valued time series into ...

**Keywords:** data mining, data streams, discretize, symbolic, time series

## 19 TransformGen: automating the maintenance of structure-oriented environments



David Garlan, Charles W. Krueger, Barbara Staudt Lerner

May 1994 **ACM Transactions on Programming Languages and Systems (TOPLAS)**,

Volume 16 Issue 3

**Publisher:** ACM Press

Full text available: pdf(3.10 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citings](#), [index terms](#), [review](#)

A serious problem for programs that use persistent data is that information created and maintained by the program becomes invalid if the persistent types used in the program are modified in a new release. Unfortunately, there has been little systematic treatment of the problem; current approaches are manual, ad hoc, and time consuming both for programmers and users. In this article we present a new approach. Focusing on the special case of managing abstract syntax trees in structure-oriented ...

**Keywords:** schema evolution, structure-oriented environments, type evolution

## 20 Query evaluation techniques for large databases



Goetz Graefe

June 1993 **ACM Computing Surveys (CSUR)**, Volume 25 Issue 2

**Publisher:** ACM Press

Full text available: pdf(9.37 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citings](#), [index terms](#), [review](#)

Database management systems will continue to manage large data volumes. Thus, efficient algorithms for accessing and manipulating large sets and sequences will be required to provide acceptable performance. The advent of object-oriented and extensible database systems will not solve this problem. On the contrary, modern data models exacerbate the problem: In order to manipulate large sets of complex objects as efficiently as today's database systems manipulate simple records, query-processi ...

**Keywords:** complex query evaluation plans, dynamic query evaluation plans, extensible database systems, iterators, object-oriented database systems, operator model of parallelization, parallel algorithms, relational database systems, set-matching algorithms, sort-hash duality

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# 1 [An interval-based approach to exhaustive and incremental interprocedural data-flow](#)

[analysis](#)

Michael Burke

July 1990 **ACM Transactions on Programming Languages and Systems (TOPLAS)**,

Volume 12 Issue 3

Publisher: ACM Press

Full text available: pdf(4.43 MB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

We reformulate interval analysis so that it can be applied to any monotone data-flow problem, including the nonfast problems of flow-insensitive interprocedural analysis. We then develop an incremental interval analysis technique that can be applied to the same class of problems. When applied to flow-insensitive interprocedural data-flow problems, the resulting algorithms are simple, practical, and efficient. With a single update, the incremental algorithm can accommodate any sequence of pr ...

# 2 [Research sessions: potpourri: Mining database structure; or, how to build a data quality browser](#)



Tamraparni Dasu, Theodore Johnson, S. Muthukrishnan, Vladislav Shkapenyuk

June 2002 **Proceedings of the 2002 ACM SIGMOD international conference on****Management of data SIGMOD '02**

Publisher: ACM Press

Full text available: pdf(1.21 MB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Data mining research typically assumes that the data to be analyzed has been identified, gathered, cleaned, and processed into a convenient form. While data mining tools greatly enhance the ability of the analyst to make data-driven discoveries, most of the time spent in performing an analysis is spent in data identification, gathering, cleaning and processing the data. Similarly, schema mapping tools have been developed to help automate the task of using legacy or federated data sources for a n ...

# 3 [External memory algorithms and data structures: dealing with massive data](#)



Jeffrey Scott Vitter

June 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 2

Publisher: ACM Press

Full text available: pdf(828.46 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

terms

Data sets in large applications are often too massive to fit completely inside the computers internal memory. The resulting input/output communication (or I/O) between fast internal memory and slower external memory (such as disks) can be a major performance bottleneck. In this article we survey the state of the art in the design and analysis of external memory (or EM) algorithms and data structures, where the goal is to exploit locality in order to reduce the I/O costs. We consider a varie ...

**Keywords:** B-tree, I/O, batched, block, disk, dynamic, extendible hashing, external memory, hierarchical memory, multidimensional access methods, multilevel memory, online, out-of-core, secondary storage, sorting

#### 4 Multidimensional access methods



Volker Gaede, Oliver Günther

June 1998 **ACM Computing Surveys (CSUR)**, Volume 30 Issue 2

**Publisher:** ACM Press

Full text available: pdf(1.05 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Search operations in databases require special support at the physical level. This is true for conventional databases as well as spatial databases, where typical search operations include the point query (find all objects that contain a given search point) and the region query (find all objects that overlap a given search region). More than ten years of spatial database research have resulted in a great variety of multidimensional access methods to support ...

**Keywords:** data structures, multidimensional access methods

#### 5 Query evaluation techniques for large databases



Goetz Graefe

June 1993 **ACM Computing Surveys (CSUR)**, Volume 25 Issue 2

**Publisher:** ACM Press

Full text available: pdf(9.37 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Database management systems will continue to manage large data volumes. Thus, efficient algorithms for accessing and manipulating large sets and sequences will be required to provide acceptable performance. The advent of object-oriented and extensible database systems will not solve this problem. On the contrary, modern data models exacerbate the problem: In order to manipulate large sets of complex objects as efficiently as today's database systems manipulate simple records, query-processi ...

**Keywords:** complex query evaluation plans, dynamic query evaluation plans, extensible database systems, iterators, object-oriented database systems, operator model of parallelization, parallel algorithms, relational database systems, set-matching algorithms, sort-hash duality

#### 6 GPGPU: general purpose computation on graphics hardware



David Luebke, Mark Harris, Jens Krüger, Tim Purcell, Naga Govindaraju, Ian Buck, Cliff Woolley, Aaron Lefohn

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

**Publisher:** ACM Press

Full text available:  [pdf\(63.03 MB\)](#) Additional Information: [full citation](#), [abstract](#)

The graphics processor (GPU) on today's commodity video cards has evolved into an extremely powerful and flexible processor. The latest graphics architectures provide tremendous memory bandwidth and computational horsepower, with fully programmable vertex and pixel processing units that support vector operations up to full IEEE floating point precision. High level languages have emerged for graphics hardware, making this computational power accessible. Architecturally, GPUs are highly parallel s ...

## 7 Temporal statement modifiers



Michael H. Böhlen, Christian S. Jensen, Richard Thomas Snodgrass  
December 2000 **ACM Transactions on Database Systems (TODS)**, Volume 25 Issue 4

**Publisher:** ACM Press

Full text available:  [pdf\(317.23 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A wide range of database applications manage time-varying data. Many temporal query languages have been proposed, each one the result of many carefully made yet subtly interacting design decisions. In this article we advocate a different approach to articulating a set of requirements, or desiderata, that directly imply the syntactic structure and core semantics of a temporal extension of an (arbitrary) nontemporal query language. These desiderata facilitate transitioning applications from a ...

**Keywords:** ATSQL, statement modifiers, temporal databases

## 8 A provably efficient computational model for approximate spatiotemporal retrieval



Delis Vasilis, Makris Christos, Sioutas Spiros  
November 1999 **Proceedings of the 7th ACM international symposium on Advances in geographic information systems**

**Publisher:** ACM Press

Full text available:  [pdf\(149.97 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

## 9 Hierarchical representations of collections of small rectangles



Hanan Samet  
September 1988 **ACM Computing Surveys (CSUR)**, Volume 20 Issue 4

**Publisher:** ACM Press

Full text available:  [pdf\(3.68 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A tutorial survey is presented of hierarchical data structures for representing collections of small rectangles. Rectangles are often used as an approximation of shapes for which they serve as the minimum rectilinear enclosing object. They arise in applications in cartography as well as very large-scale integration (VLSI) design rule checking. The different data structures are discussed in terms of how they support the execution of queries involving proximity relations. The focus is on inte ...

## 10 Level set and PDE methods for computer graphics



David Breen, Ron Fedkiw, Ken Museth, Stanley Osher, Guillermo Sapiro, Ross Whitaker  
August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

**Publisher:** ACM Press

Full text available:  [pdf\(17.07 MB\)](#) Additional Information: [full citation](#), [abstract](#)

Level set methods, an important class of partial differential equation (PDE) methods,

define dynamic surfaces implicitly as the level set (iso-surface) of a sampled, evolving nD function. The course begins with preparatory material that introduces the concept of using partial differential equations to solve problems in computer graphics, geometric modeling and computer vision. This will include the structure and behavior of several different types of differential equations, e.g. the level set eq ...

### 11 The elements of nature: interactive and realistic techniques



Oliver Deussen, David S. Ebert, Ron Fedkiw, F. Kenton Musgrave, Przemyslaw Prusinkiewicz, Doug Roble, Jos Stam, Jerry Tessendorf  
August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

**Publisher:** ACM Press

Full text available: [pdf\(17.65 MB\)](#) Additional Information: [full citation](#), [abstract](#)

This updated course on simulating natural phenomena will cover the latest research and production techniques for simulating most of the elements of nature. The presenters will provide movie production, interactive simulation, and research perspectives on the difficult task of photorealistic modeling, rendering, and animation of natural phenomena. The course offers a nice balance of the latest interactive graphics hardware-based simulation techniques and the latest physics-based simulation techni ...

### 12 Broadcast protocols to support efficient retrieval from databases by mobile users



Anindya Datta, Debra E. VanderMeer, Aslihan Celik, Vijay Kumar  
March 1999 **ACM Transactions on Database Systems (TODS)**, Volume 24 Issue 1

**Publisher:** ACM Press

Full text available: [pdf\(638.48 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Mobile computing has the potential for managing information globally. Data management issues in mobile computing have received some attention in recent times, and the design of adaptive broadcast protocols has been posed as an important problem. Such protocols are employed by database servers to decide on the content of broadcasts dynamically, in response to client mobility and demand patterns. In this paper we design such protocols and also propose efficient retrieval s ...

**Keywords:** adaptive broadcast protocols, client-server computing, energy conservation, mobile databases

### 13 Mobile computing and applications (MCA): Indexing continuously changing data with mean-variance tree



Yuni Xia, Sunil Prabhakar, Shan Lei, Reynold Cheng, Rahul Shah  
March 2005 **Proceedings of the 2005 ACM symposium on Applied computing SAC '05**

**Publisher:** ACM Press

Full text available: [pdf\(221.02 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Constantly evolving data arise in various mobile applications such as location-based services and sensor networks. The problem of indexing the data for efficient query processing is of increasing importance. Due to the constant changing nature of the data, traditional indexes suffer from a high update overhead which leads to poor performance. In this paper, we propose a novel index structure, the MVTree, which is built based on the mean and variance of the data instead of the actual data values ...

**Keywords:** data streaming, indexing, query and update processing

**Face recognition: A literature survey**

W. Zhao, R. Chellappa, P. J. Phillips, A. Rosenfeld

December 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 4**Publisher:** ACM Press

Full text available: pdf(4.28 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

As one of the most successful applications of image analysis and understanding, face recognition has recently received significant attention, especially during the past several years. At least two reasons account for this trend: the first is the wide range of commercial and law enforcement applications, and the second is the availability of feasible technologies after 30 years of research. Even though current machine recognition systems have reached a certain level of maturity, their success is ...

**Keywords:** Face recognition, person identification**15 Seeing, hearing, and touching: putting it all together**

Brian Fisher, Sidney Fels, Karon MacLean, Tamara Munzner, Ronald Rensink

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04****Publisher:** ACM Press

Full text available: pdf(20.64 MB)

Additional Information: [full citation](#)**16 LH\*<sub>RS</sub>---a highly-available scalable distributed data structure**

Witold Litwin, Rim Moussa, Thomas Schwarz

September 2005 **ACM Transactions on Database Systems (TODS)**, Volume 30 Issue 3**Publisher:** ACM Press

Full text available: pdf(774.32 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

LH&ast;RS is a high-availability scalable distributed data structure (SDDS). An LH&ast;RS file is hash partitioned over the distributed RAM of a multicomputer, for example, a network of PCs, and supports the unavailability of any  $k \geq 1$  of its server nodes. The value of  $k$  transparently grows with the file to offset the reliability decline. Only the number of the storage nodes potentially limits the file growth. The high-availability management uses a novel ...

**Keywords:** P2P, Scalable distributed data structure, grid computing, high-availability, linear hashing, physical database design**17 Visualizing geospatial data**

Theresa Marie Rhyne, Alan MacEachern, Theresa-Marie Rhyne

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04****Publisher:** ACM Press

Full text available: pdf(13.99 MB)

Additional Information: [full citation](#), [abstract](#)

This course reviews concepts and highlights new directions in GeoVisualization. We review four levels of integrating geospatial data and geographic information systems (GIS) with scientific and information visualization (VIS) methods. These include:• Rudimentary: minimal data sharing between the GIS and Vis systems• Operational: consistency of geospatial data• Functional: transparent communication between the GIS and Vis systems• Merged: one comprehensive toolkit environmentW ...

**18 Goal-oriented buffer management revisited**

Kurt P. Brown, Michael J. Carey, Miron Livny

June 1996 **ACM SIGMOD Record , Proceedings of the 1996 ACM SIGMOD international conference on Management of data SIGMOD '96**, Volume 25 Issue 2

Publisher: ACM Press

Full text available: pdf(1.56 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper we revisit the problem of achieving multi-class workload response time goals by automatically adjusting the buffer memory allocations of each workload class. We discuss the virtues and limitations of previous work with respect to a set of criteria we lay out for judging the success of any goal-oriented resource allocation algorithm. We then introduce the concept of *hit rate concavity* and develop a new goal-oriented buffer allocation algorithm, called *Class Fencing*, th ...

**19 Research sessions: security and privacy: Order preserving encryption for numeric data**

Rakesh Agrawal, Jerry Kiernan, Ramakrishnan Srikant, Yirong Xu

June 2004 **Proceedings of the 2004 ACM SIGMOD international conference on Management of data**

Publisher: ACM Press

Full text available: pdf(188.60 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

Encryption is a well established technology for protecting sensitive data. However, once encrypted, data can no longer be easily queried aside from exact matches. We present an order-preserving encryption scheme for numeric data that allows any comparison operation to be directly applied on encrypted data. Query results produced are sound (no false hits) and complete (no false drops). Our scheme handles updates gracefully and new values can be added without requiring changes in the encryption of ...

**20 Terrain database interoperability issues in training with distributed interactive simulation**

Guy A. Schiavone, S. Sureshchandran, Kenneth C. Hardis

July 1997 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**, Volume 7 Issue 3

Publisher: ACM Press

Full text available: pdf(443.34 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

In Distributed Interactive Simulation (DIS), each participating node is responsible for maintaining its own model of the synthetic environment. Problems may arise if significant inconsistencies are allowed to exist between these separate world views, resulting in unrealistic simulation results or negative training, and a corresponding degradation of interoperability in a DIS simulation exercise. In the DIS community, this is known as the simulator terrain database (TDB) correlation problem. ...

**Keywords:** distributed interactive simulation, terrain databases

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### 1 [Research sessions: stream management: Online event-driven subsequence](#)



#### [matching over financial data streams](#)

Huanmei Wu, Betty Salzberg, Donghui Zhang

 June 2004 **Proceedings of the 2004 ACM SIGMOD international conference on Management of data**

Publisher: ACM Press

 Full text available: [pdf\(753.59 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Subsequence similarity matching in time series databases is an important research area for many applications. This paper presents a new approximate approach for automatic online subsequence similarity matching over massive data streams. With a simultaneous on-line segmentation and pruning algorithm over the incoming stream, the resulting piecewise linear representation of the data stream features high sensitivity and accuracy. The similarity definition is based on a permutation followed by a met ...

### 2 [An object-based programming model for shared data](#)



Gail E. Kaiser, Brent Hailpern

 April 1992 **ACM Transactions on Programming Languages and Systems (TOPLAS)**, Volume 14 Issue 2

Publisher: ACM Press

 Full text available: [pdf\(3.28 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

The classical object model supports private data within objects and clean interfaces between objects, and by definition does not permit sharing of data among arbitrary objects. This is a problem for real-world applications, such as advanced financial services and integrated network management, where the same data logically belong to multiple objects and may be distributed over multiple nodes on the network. Rather than give up the advantages of encapsulated objects in modeling real-world en ...

**Keywords:** coordination language, daemons, financial applications, object-based, real-time, sharing

### 3 [B2B e-commerce and enterprise integration: Innovative perspectives: value creation and electronic procurement](#)



John Douglas Thomson

 August 2005 **Proceedings of the 7th international conference on Electronic commerce**

**ICEC '05****Publisher:** ACM PressFull text available:  pdf(423.24 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

This research addresses the very important question of the impact of web-based electronic procurement systems on corporate governance, as related to organizational purchasing and value creation. Unlike traditional marketplaces where the sale and purchase of products takes place at specific locations, the electronic marketplace is mainly designed to use the Internet infrastructure to exchange information and create virtual communities in space (Hagel and Armstrong 1997), where transactions between ...

**Keywords:** electronic, innovation, procurement, transaction costs, transparency, trust, value creation

**4 An architecture and two new research problems in ARCS databases**

Anindya Datta, Sharma Chakravarthy, Shibby Thomas, Igor R. Viguier

November 1996 **Proceedings of the workshop on on Databases: active and real-time****Publisher:** ACM PressFull text available:  pdf(416.19 KB) Additional Information: [full citation](#), [references](#), [index terms](#)**5 Special issue on prototypes of deductive database systems: The glue-nail deductive database system: design, implementation, and evaluation**

Marcia A. Derr, Shinichi Morishita, Geoffrey Phipps

April 1994 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 3 Issue 2**Publisher:** Springer-Verlag New York, Inc.Full text available:  pdf(2.16 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We describe the design and implementation of the Glue-Nail deductive database system. Nail is a purely declarative query language; Glue is a procedural language used for non-query activities. The two languages combined are sufficient to write a complete application. Nail and Glue code are both compiled into the target language IGlue. The Nail compiler uses variants of the magic sets algorithm and supports well-founded models. The Glue compiler's static optimizer uses peephole techniques and data ...

**Keywords:** language, performance, query optimization

**6 VDE: a virtual data engine for APL**


J. Merrill

August 1994 **ACM SIGAPL APL Quote Quad , Proceedings of the international conference on APL : the language and its applications: the language and its applications APL '94**, Volume 25 Issue 1**Publisher:** ACM PressFull text available:  pdf(839.75 KB) Additional Information: [full citation](#), [index terms](#), [review](#)**7 Research papers: mining biological and medical data: Subsequence matching on structured time series data**

Huanmei Wu, Betty Salzberg, Gregory C Sharp, Steve B Jiang, Hiroki Shirato, David Kaeli

June 2005 **Proceedings of the 2005 ACM SIGMOD international conference on Management of data****Publisher:** ACM Press



Full text available:  pdf(930.08 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Subsequence matching in time series databases is a useful technique, with applications in pattern matching, prediction, and rule discovery. Internal structure within the time series data can be used to improve these tasks, and provide important insight into the problem domain. This paper introduces our research effort in using the internal structure of a time series directly in the matching process. This idea is applied to the problem domain of respiratory motion data in cancer radiation treatment ...

## 8 A product perspective on total data quality management



Richard Y. Wang

February 1998 **Communications of the ACM**, Volume 41 Issue 2

**Publisher:** ACM Press

Full text available:  pdf(81.26 KB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)


## 9 Special issue: AI in engineering



D. Sriram, R. Joobhani

April 1985 **ACM SIGART Bulletin**, Issue 92

**Publisher:** ACM Press

Full text available:  pdf(8.79 MB)

Additional Information: [full citation](#), [abstract](#)

The papers in this special issue were compiled from responses to the announcement in the July 1984 issue of the SIGART newsletter and notices posted over the ARPAnet. The interest being shown in this area is reflected in the sixty papers received from over six countries. About half the papers were received over the computer network.

## 10 An authorization model for temporal and derived data: securing information portals



Vijayalakshmi Atluri, Avigdor Gal

February 2002 **ACM Transactions on Information and System Security (TISSEC)**, Volume 5 Issue 1

**Publisher:** ACM Press

Full text available:  pdf(406.85 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The term *information portals* refers to Web sites that serve as main providers of focused information, gathered from distributed data sources. Gathering and disseminating information through information portals introduce new security challenges. In particular, the authorization specifications, as well as the granting process, are temporal by nature. Also, more often than not, the information provided by the portal is in fact derived from more than one backend data source. Therefore, any au ...

**Keywords:** Access control, authorization administration, derived data, temporal data

## 11 DB-3 (databases): data mining: Framework and algorithms for trend analysis in massive temporal data sets



Sreenivas Gollapudi, D. Sivakumar

November 2004 **Proceedings of the thirteenth ACM international conference on Information and knowledge management CIKM '04**

**Publisher:** ACM Press

Full text available:  pdf(235.70 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Mining massive temporal data streams for significant trends, emerging buzz, and unusually high or low activity is an important problem with several commercial

applications. In this paper, we propose a framework based on relational records and metric spaces to study such problems. Our framework provides the necessary mathematical underpinnings for this genre of problems, and leads to efficient algorithms in the stream/sort model of massive data sets (where the algorithm makes passes over the d ...

**Keywords:** data stream algorithms, hierarchically partitioned data, metric approximations, taxonomies, trend analysis

## 12 Intentional resolution of privacy protection in database systems



Naftaly Minsky

March 1976 **Communications of the ACM**, Volume 19 Issue 3

**Publisher:** ACM Press

Full text available: pdf(1.34 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Traditionally, privacy protection in database systems is understood to be the control over what information a given user can get from a database. This paper is concerned with another, independent, dimension of privacy protection, the control over what a user is allowed to do with a piece of information supplied to him by the database. The ability to condition the supply of information on its intended use is called here "intentional resolution" of privacy protection. T ...

**Keywords:** intentional resolution of privacy, interaction with databases, privacy, protection in databases, protection in programming languages, security

## 13 Sizing DB2 UDB® servers for business intelligence workloads



Ted J. Wasserman, Patrick Martin, Haider Rizvi

October 2004 **Proceedings of the 2004 conference of the Centre for Advanced Studies on Collaborative research**

**Publisher:** IBM Press

Full text available: pdf(178.24 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Computer system sizing involves estimating the amount of hardware resources needed to support a new application that has not been run in a production environment. Sizing assumes that little system environment information or performance measurements are available for the specific workload, thus a sizing expert must use extrapolations from similar workloads, industry benchmarks, rules-of-thumb, and hardware performance guidelines to determine the type and quantity of resources required. In this ...

## 14 Locally adaptive dimensionality reduction for indexing large time series databases



Kaushik Chakrabarti, Eamonn Keogh, Sharad Mehrotra, Michael Pazzani

June 2002 **ACM Transactions on Database Systems (TODS)**, Volume 27 Issue 2

**Publisher:** ACM Press

Full text available: pdf(1.48 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Similarity search in large time series databases has attracted much research interest recently. It is a difficult problem because of the typically high dimensionality of the data. The most promising solutions involve performing dimensionality reduction on the data, then indexing the reduced data with a multidimensional index structure. Many dimensionality reduction techniques have been proposed, including Singular Value Decomposition (SVD), the Discrete Fourier transform (DFT), and the Discrete ...

**Keywords:** Dimensionality reduction, indexing, time-series similarity retrieval

### 15 Incremental database systems: databases from the ground up



Stanley B. Zdonik

June 1993 **ACM SIGMOD Record , Proceedings of the 1993 ACM SIGMOD international conference on Management of data SIGMOD '93**, Volume 22 Issue 2

**Publisher:** ACM Press

Full text available: [pdf\(689.98 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper discusses a new approach to database management systems that is better suited to a wide class of new applications such as scientific, hypermedia, and financial applications. These applications are characterized by their need to store large amounts of raw, unstructured data. Our premise is that, in these situations, database systems need a way to store data without imposing a schema, and a way to provide a schema incrementally as we process the data. This requires that the ...

### 16 RCV1: A New Benchmark Collection for Text Categorization Research



David D. Lewis, Yiming Yang, Tony G. Rose, Fan Li

December 2004 **The Journal of Machine Learning Research**, Volume 5

**Publisher:** MIT Press

Full text available: [pdf\(628.29 KB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

Reuters Corpus Volume I (RCV1) is an archive of over 800,000 manually categorized newswire stories recently made available by Reuters, Ltd. for research purposes. Use of this data for research on text categorization requires a detailed understanding of the real world constraints under which the data was produced. Drawing on interviews with Reuters personnel and access to Reuters documentation, we describe the coding policy and quality control procedures used in producing the RCV1 data, the inten ...

### 17 A meta model and an infrastructure for the non-transparent replication of object databases



Werner Dreyer, Klaus R. Dittrich

November 2000 **Proceedings of the ninth international conference on Information and knowledge management**

**Publisher:** ACM Press

Full text available: [pdf\(179.36 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

**Keywords:** object databases, object replication, replication meta models

### 18 Research perspectives for time series management systems



Werner Dreyer, Angelika Kotz Dittrich, Duri Schmidt

March 1994 **ACM SIGMOD Record**, Volume 23 Issue 1

**Publisher:** ACM Press

Full text available: [pdf\(693.92 KB\)](#) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

Empirical research based on time series is a data intensive activity that needs a data base management system (DBMS). We investigate the special properties a time series management system (TSMS) should have. We then show that currently available solutions and related research directions are not well suited to handle the existing problems. Therefore, we propose the development of a special purpose TSMS, which will offer particular modeling, retrieval, and computation capabilities. It will be suit ...

**19** Queries and aggregation: Cleaning and querying noisy sensors

Eiman Elnahrawy, Badri Nath

September 2003 **Proceedings of the 2nd ACM international conference on Wireless sensor networks and applications**

Publisher: ACM Press

Full text available: pdf(256.08 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Sensor networks have become an important source of data with numerous applications in monitoring various real-life phenomena as well as industrial applications and traffic control. Unfortunately, sensor data is subject to several sources of errors such as noise from external sources, hardware noise, inaccuracies and imprecision, and various environmental effects. Such errors may seriously impact the answer to any query posed to the sensors. In particular, they may yield imprecise or even incorre ...

**Keywords:** bayesian theory, noisy sensors, query evaluation, statistics, uncertainty, wireless sensor networks

**20** Data mining techniques for optimizing inventories for electronic commerce

Anjali Dhond, Amar Gupta, Sanjeev Vadhavkar

August 2000 **Proceedings of the sixth ACM SIGKDD international conference on Knowledge discovery and data mining**

Publisher: ACM Press

Full text available: pdf(238.69 KB) Additional Information: [full citation](#), [references](#), [index terms](#)

**Keywords:** data massaging, inventory optimization, temporal data mining

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		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L167	L166 and (adjust\$3 near5 value\$1)	2
<input type="checkbox"/>	L166	L165 and time\$series	24
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<input type="checkbox"/>	L163	l162 and (multiple near5 database\$1)	7
<input type="checkbox"/>	L162	(adjust\$3 near5 data) same (time near5 interval\$1)	937
<input type="checkbox"/>	L161	(adjust\$3 near5 data) same (time near5 interval\$1) and time\$series and (financial near5 data)	1
<input type="checkbox"/>	L160	L159 and (track\$3 near5 financial)	5
<input type="checkbox"/>	L159	L155 and (multiple near5 database\$1)	31
<input type="checkbox"/>	L158	L157 and (multiple near5 database\$1)	0
<input type="checkbox"/>	L157	L156 and (adjust\$3 near5 data)	9
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<input type="checkbox"/>	L155	(time\$series) near5 data	2340
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<input type="checkbox"/>	L152	l148 and (adjust\$3 near5 interval\$1) and (stock near5 price\$1)	1
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<input type="checkbox"/>	L150	L149 and adjust\$3	5
<input type="checkbox"/>	L149	L148 and (financial near5 data)	10
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<input type="checkbox"/>	L147	6065014 .uref.	1
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<input type="checkbox"/>	L145	L144 and mapp\$3	7
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<input type="checkbox"/>	L143	L142 and (source near5 database) and (target near5 database)	58
<input type="checkbox"/>	L142	(first near5 database) and (second near5 database) and @py<=2001	3375
<input type="checkbox"/>	L141	L140 and mapp\$3	6
<input type="checkbox"/>	L140	(time\$series) and (second near5 database) and @py<=2000 (adjust\$3 near5 time) and (adjust\$3 near5 data) and (adjust\$3 near5 interval\$1)	13

<input type="checkbox"/>	L139 and (second near5 database) and @py<=2000	0
<input type="checkbox"/>	L138 (adjust\$3 near5 time) and (adjust\$3 near5 data) and (adjust\$3 near5 interval\$1) and (second near5 database) and @py<=2001	1
<input type="checkbox"/>	L137 L136 and (adjust\$3 near5 interval\$1)	2
<input type="checkbox"/>	L136 L135 and (time near5 interval\$1)	113
<input type="checkbox"/>	L135 L134 and (second near5 database)	411
<input type="checkbox"/>	L134 (stor\$3) same (raw near5 data) and (first near5 database)	837
<input type="checkbox"/>	L133 (stor\$3) same (raw near5 data)	0
<input type="checkbox"/>	L132 (stor\$3) same (raw near5 data) and (first near5 database)	0
<input type="checkbox"/>	L131 L130 and (market near5 data)	3
<input type="checkbox"/>	L130 (database\$1 and synchron\$3 and time and interval\$1 and adjust\$3 and raw and data and mapp\$3) and @py<=2001	223
<input type="checkbox"/>	L129 L128 and mapp\$3	5
<input type="checkbox"/>	L128 L127 and (interval\$1 near5 adjust\$3)	38
<input type="checkbox"/>	L127 L126 and (time near5 interval\$1)	1714
<input type="checkbox"/>	L126 (first near5 database) and (second near5 database) <i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i>	12728
<input type="checkbox"/>	L125 ('5544281' '6032125' '6125105' '6370437' '6381554' '6532449')![pn] <i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	6
<input type="checkbox"/>	L124 L123 and (trend\$1 near5 interval\$1)	3
<input type="checkbox"/>	L123 L118 and (interval\$1 near5 data)	74
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<input type="checkbox"/>	L121 L120 and (interval\$1 near5 adjustment\$1)	0
<input type="checkbox"/>	L120 L119 and (adjust\$3 near5 data)	22
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<input type="checkbox"/>	L118 L117 and database\$1	369
<input type="checkbox"/>	L117 (stock near5 price\$1) and (time near5 series)	558
<input type="checkbox"/>	L116 (interval\$1 near5 data) and (interval\$1 near5 adjustment\$1) and (time\$series) and (stock near5 price\$1) and database\$1	0
<input type="checkbox"/>	L115 (interval\$1 near5 data) and (interval\$1 near5 adjustment\$1) and (time\$series) and (raw near5 data) and database\$1	4
<input type="checkbox"/>	L114 5454104 .uref.	16
<input type="checkbox"/>	L113 L112 and mapp\$3	6
<input type="checkbox"/>	L112 (first near5 database) and (second near5 database) and (raw near5 data) and (time near5 series) and @py<=2001 (securities near5 database\$1) and (trad\$3 near5 database\$1) and (market\$3 near5 database\$1) and (price near5 database\$1) and (time near5 series) and track\$3 and (adjust\$3 near5 data) and (raw near5 data) and @py<=2001	10
<input type="checkbox"/>	L111 (first near5 database) and (second near5 database) and (raw near5 data) and (time near5 series) and (track\$3 near5 data) and mapp\$3 and (adjust\$3 near5 data) and @py<=2001	1

<input type="checkbox"/>	L109	(time\$series) and (financial near5 (chart\$1 or graph\$1)) and @py<=2001	1
<input type="checkbox"/>	L108	(mapp\$3 near5 relational) and (relational near5 database\$1) and financial and trad\$3 and stock\$1 and price\$1 and time and interval\$1 and graph\$1 and @py<=2001	2
<input type="checkbox"/>	L107	(stock near5 table\$1) and (trad\$3 near5 table\$1) and (currency near5 table\$1) and (time near5 interval\$1) and mapp\$3 and (adjust\$3 near5 (value\$1 or price\$1)) and @py<=2001	0
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<input type="checkbox"/>	L105	L103 and (price near5 (data structure))	13
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<input type="checkbox"/>	L103	stock same (data near5 structure)	453
<input type="checkbox"/>	L102	stock same (data neaer5 structure)	0
<input type="checkbox"/>	L101	L100 and display\$3 and currency and financial	1
<input type="checkbox"/>	L100	(primary near5 database) and (secondary near5 database\$1) and mapp\$3 and interval\$1 and data and adjust\$3 and @py<=2001	11
<input type="checkbox"/>	L99	L98 and financial	9
<input type="checkbox"/>	L98	L97 and (data near5 type\$1)	32
<input type="checkbox"/>	L97	L96 and (mapp\$3 near5 structures)	35
<input type="checkbox"/>	L96	source near5 (data structure) and (target near5 (data structure))	214
<input type="checkbox"/>	L95	5220500.uref.	46
<input type="checkbox"/>	L94	L93 and (raw near5 data)	9
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<input type="checkbox"/>	L92	L90 and @py<=2001	8
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<input type="checkbox"/>	L90	L89 and query\$3	23
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<input type="checkbox"/>	L88	L86 and mapp\$3	24
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<input type="checkbox"/>	L86	L85 and (currency near5 database\$1)	26
<input type="checkbox"/>	L85	(financial near5 database\$1) and (securit\$3 near5 database\$1)	459
<input type="checkbox"/>	L84	(financial near5 database\$1) and (securit\$3 near5 database\$1) and (currency near5 database\$1) and mapp\$3 and stor\$3 and analys\$3 and trend\$1 and @py<=2001	0
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<input type="checkbox"/>	L77	(relational near5 databases) and (data near5 structure\$1) and mapp\$3 and time and series and @py<=2001	478
<input type="checkbox"/>	L76	L74 and time and interval\$1 and range\$1	0
<input type="checkbox"/>	L75	L74 and (adjust\$3 near5 interval\$1)	0
<input type="checkbox"/>	L74	L45 and @py<=2001	10
<input type="checkbox"/>	L73	L72 and (data near5 interval\$1) and (time near5 interval\$1) and @py<=2001	4
<input type="checkbox"/>	L72	(stock near5 market\$1) and (relational near5 databases)	422
<input type="checkbox"/>	L71	L70 and range	1
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<input type="checkbox"/>	L69	L68 and mapp\$3	16
<input type="checkbox"/>	L68	L67 and first and second and database and structure\$1	22
<input type="checkbox"/>	L67	financial near5 schema	34
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<input type="checkbox"/>	L65	L64 and value\$1 and adjust\$3	9
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<input type="checkbox"/>	L54	(stock near5 table\$1) and (trader\$1 near5 table\$1) and time\$series and relational and @py<=2001	0
<input type="checkbox"/>	L53	(stock near5 database\$1) and (trader\$1 near5 database\$1) and time\$series and relational and @py<=2001	0
<input type="checkbox"/>	L52	(stock near5 database\$1) and (trader\$1 near5 database\$1) and time\$series and relational and structure and @py<=2001	0
<input type="checkbox"/>	L51	L50 and mapp\$3 and @py<=2001	4
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<input type="checkbox"/>	L49	(data near5 value\$1) and (time\$series)	2031
<input type="checkbox"/>	L48	L47 and (time\$series) and graph\$1 and chart\$1	12
<input type="checkbox"/>	L47	L13 and stock and financial and trend	167



<input type="checkbox"/>	L46	L45 and stock and financial and trend	3
<input type="checkbox"/>	L45	L44 and ((second near5 database) same (data near5 structure))	42
<input type="checkbox"/>	L44	(primary) same (data near5 structure)	4912
<input type="checkbox"/>	L43	L42 and ((stock near5 price) same (price near5 attribute\$1))	1
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<input type="checkbox"/>	L30	L29 and @py<=2001	0
<input type="checkbox"/>	L29	L28 and adjust\$3 and raw and data\$	12
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<input type="checkbox"/>	L27	L13 and histogram\$1 and (time\$series)	18
<input type="checkbox"/>	L26	L25 and (time\$series)	1
<input type="checkbox"/>	L25	5590325.uref.	18
<input type="checkbox"/>	L24	(time\$series) and (stock near5 database\$1) and @py<=2001	5
<input type="checkbox"/>	L23	(time\$series) and (stock near5 database\$1) and (financial near5 data) and @py<=2001	1
<input type="checkbox"/>	L22	(adjust\$3 near5 graph\$1) and (financial near5 database\$1)	1
<input type="checkbox"/>	L21	(renko near5 graph\$1) and (financial near5 database\$1)	0
<input type="checkbox"/>	L20	(renko near5 chart\$1) and (financial near5 database\$1)	0
<input type="checkbox"/>	L19	(swing near5 chart\$1) and (financial near5 database\$1)	0
<input type="checkbox"/>	L18	(swing near5 chart\$1) and (financial near5 database\$1) and (time near5 series)	0
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<input type="checkbox"/>	L16	(swing near5 chart\$1) and (financial near5 database\$1) and (time near5 series) and (adjustment\$1 near5 data) and (data near5 value\$1) and (data near5 range\$1) and (stock near5 database\$1) and @py<=2001	0
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<input type="checkbox"/>	L13	(second near5 database) and (first near5 database)	12728
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<input type="checkbox"/>	L11	L10 and (financial near5 data)	0
<input type="checkbox"/>	L10	L1 and (databases)	31
<input type="checkbox"/>	L9	L8 and (raw near5 data)	10
<input type="checkbox"/>	L8	L7 and respons\$	23
<input type="checkbox"/>	L7	L6 and map\$	24
<input type="checkbox"/>	L6	L5 and stor\$	38
<input type="checkbox"/>	L5	L4 and (adjust\$ near5 data)	49
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<input type="checkbox"/>	L3	L2 and (data near5 interval\$1)	2
<input type="checkbox"/>	L2	L1 and (raw near5 data)	11
<input type="checkbox"/>	L1	(data\$ and adjust\$).ti.	15733

END OF SEARCH HISTORY